

Hydrologic Model Manager

Short Name	RootCanal
Long Name	RootCanal
Description	
Model Type	Unsteady, one-dimensional, open-channel flow
Model Objectives	Simulate branching/looping canal system hydraulic operation, including several gate/boundary types and local gate automation
Agency Office	Bio & Irrigation Engrg Dept, Utah State Univ.
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Model Structure	Variation of 4-pt implicit solution, rectangular grid in the x-t plane
Interception	
Groundwater	
Snowmelt	
Precipitation	
Evapo-transpiration	
Infiltration	
Model Paramters	Canal system dimensions (reach connections, lengths, bed slope(s), cross sectional geometry, etc.); hydraulic calibration (Manning or Chezy roughness, seepage, evaporation, gate/weir/other calibration parameters); operational settings (duration of simulation, gate/weir/other settings, hydrographs, etc.); interface options for viewing simulation results.
Spatial Scale	Variable according to specified parameters and simulation results, but typically 1 to 100 m between computational nodes in direction of flow
Temporal Scale	User-specified, from 1 second to 1 hour (default is 1 minute)
Input Requirements	Same as model parameters
Computer Requirements	PC running MS Windows 95/98, Windows 2000, or Windows NT 4.x, and later versions of these 32-bit operating systems.
Model Output	Flow rates and depths as a function of time, gate/weir/other settings. Tabular & graphical on-screen and printed results. Output to text files in tabular format. Multiple-window output on-screen and playback of water levels, flow rates, average flow velocities, and flow cross sectional areas.
Parameter Estimatr Model Calibrtn	Requires precise knowledge of hydraulic roughness (Manning or Chezy), seepage loss rates, evaporation, and wind speed. Includes "calculator" for estimating roughness as a function of field data.
Model Testing Verification	Previous versions (Canal, Canals, and CanalMan) were tested with field data from USBR and elsewhere, and against other hydraulic models of this type.
Model Sensitivity	Water depths to within 1 mm, flow rates to within 1 lps.
Model Reliability	Highly robust and highly developed user interface
Model Application	World-wide
Documentation	On-screen interactive "help" and printed user's manual.
Other Comments	Currently in beta-test versions; the previous version (CanalMan) is available now.

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Developer	
Technical Contact	
Contact Organization	